DELIVERABLES – 05/03/04

DESIGN DEVELOPMENT

The design development documents shall embody adequate architectural, landscape architectural, civil, structural, mechanical, and electrical drawings showing plans, elevations, sections, details, notational information, outline specifications, updated Class B estimate and other data at a level of completeness equivalent to approximately 40% completed construction drawings.

Drawing Minimums

- Standard cover sheet (with park map and project location map)
- Index sheet (may be included on cover sheet)
- General:
    - Overall site plan showing total project:
        - Contractor staging areas (construction storage, field office, construction camp) with adequate space or sequencing needs
        - Construction limits
        - Construction access
        - Datum information, survey control
        - Monuments and benchmarks with coordinates and elevations
        - Property lines with bearings, easements, utility corridors and setbacks
        - Unique construction requirements
    - Sheet index, symbol legend and abbreviations list
    - Existing conditions plan:
        - Contours and spot elevations
        - Benchmarks with coordinates and elevation

Property lines with bearings, easements and setbacks
Buildings and other structures
Site features: roads, parking, structures, walks, steps, walls, etc.
Utilities, above and below ground, shown to scale (transformers, pull boxes, manholes, inlets, lift stations, propane tanks, septic tanks, culverts, etc.) include spot elevations for each, invert elevations for all below ground structures
Existing vegetation
Boring data
Construction Limits

- Civil Engineering
  - Utilities plans:
    - Existing conditions (as base)
    - Geotechnical testing areas, boring locations, percolation test holes
    - Water systems and components: collection, treatment, and distribution layouts
    - Sewage disposal systems and components: location, size, profile, layout
    - Construction Limits
  - Road and Parking Layout:
    - Typical x-sections, alignments, profiles
    - Road and parking centerline and curve data
    - Intersections and other site radii identified with radius and coordinates
  - Storm water structure design and layout
    - System schematics and flow diagrams
  - Key and unique project details

- Landscape Architecture
  - Demolition Plan (if required):
    - Existing conditions (as base)
    - Structures
    - Plant material (tree protection, plants to be removed or salvaged)
    - Utilities (identified for removal or abandonment)
    - Site furnishings
    - Clearing and grubbing
    - Rock outcrops
    - Construction Limits
    - Storm water protection measures
  - Site Plan:
    - Existing conditions (as base)
    - Major Site features: roads, parking, structures, site drainage, walks, steps, walls, etc.
    - Utilities shown to scale (lighting, transformers, pull boxes, manholes, inlets, lift stations, propane tanks, septic tanks, culverts, etc.)

Sections and elevations identified
Major Site elements and details identified
Construction Limits

Site layout plan:
Existing conditions (as base)
Monuments and benchmarks identified with coordinates and elevation
Roads, parking, walks and service areas locating:
- Dimensioned traffic markings
- Dimensioned walks, steps, terraces, and site elements

Buildings and structures:
- Finish floor elevations noted
- Roof overhangs

Outdoor lighting
Above and below ground utilities
Construction Limits

Grading plan:
Existing conditions
Existing contours and spot elevations
Proposed grading:
- Proposed contours (maximum 2' contour interval with each 10' interval in heavier pen weight and labeled)
- Spot elevations of key walks, ADA accessible routes, walls, parking, drainages and site elements
- Spot elevations at top and bottom of walls, steps and ramps
- High points, low points, swale centerlines
- Finish floor elevations at each access point of structures

Tree and vegetation protection
Utility systems
Construction Limits

Planting/Revegetation/Irrigation plan

Site Elevations:
Entrances
Exterior materials with major site elements
Dimensions

Site Sections (One longitudinal and one transverse):
Typical section through site
Stairs
Site Walls

- Architectural

Compliance Drawings (Historic Structure Report Drawings are similar) Annotated floor plans, elevations, roof plans, and building sections that illustrate the anticipated impact or effects of recommended treatments to historic structures (typically for SHPO review).

Demolition Drawings (typically historic structures)

Floor Plans
Roof plans
Elevations
Building Sections

New or Adaptive Use Drawings

Building Floor Plans:
- Spaces individually delineated and labeled
- Section cut references
- Enlarged layouts of special spaces
- Dimensions

Building Roof Plan:
- Drainage design
- Roof slope
- Dimensions

Building Elevations:
- Entrances, window arrangements, doors
- Exterior materials with major vertical and horizontal joints
- Roof levels
- Dimensions

Building Sections (One longitudinal and one transverse):
- Floor to floor dimensions
- Stairs and elevators
- Typical ceiling heights

General roof construction details
Roof and Window details
Typical and special construction details
Interior elevations
Reflected ceiling plans
Room finish, hardware, door and window schedules
Equipment layout
CONDOC type notes are not acceptable
Keynote Legend shall be on the same sheet as keynote reference

- Structural

General Notes
Applicable Codes and Standards
Listing of design loads in accordance with IBC 2000, Section 1603
Listing of all structural materials used, including material strengths
Diaphragm fastening requirements
Requirements for special inspection IBC 2000, Chapter 17
List of abbreviations
Symbols legend

Standard Details
Standard details applicable to the project
Control joint details
Reinforcing steel splice length schedule

Lintel schedule(s)

Foundation Plan

Fully dimensioned foundation plan (references to the architectural drawings for foundation dimensions are unacceptable) including:

- Overall building dimensions
- Column gridlines
- Location of foundation elements with respect to column gridlines
- Size of all foundation elements
- Foundation wall thickness

Floor Framing Plan

Fully dimensioned floor framing plan (references to the architectural drawings for framing dimensions are unacceptable) including:

- Overall building dimensions
- Column gridlines
- Location of framing elements with respect to column gridlines
- Size and spacing of framing members
- Size and direction of span of roof sheathing or decking

Roof Framing Plan

Fully dimensioned roof framing plan (references to the architectural drawings for framing dimensions are unacceptable) including:

- Overall building dimensions
- Column gridlines
- Location of framing elements with respect to column gridlines
- Size and spacing of framing members
- Size and direction of span of roof sheathing or decking

Details

Foundation Details

Floor Framing Details

- Loading diagrams for special load cases for steel bar joists
- Column schedules for steel buildings
- Column and beam schedules for concrete buildings

Roof Framing Details

- Loading diagrams for special load cases for steel bar joists
- Column schedules for steel buildings
- Column and beam schedules for concrete buildings
- Prefab wood truss profiles with loading diagrams for all load cases

- Mechanical

Preliminary equipment sizes, locations, and capacities

Preliminary equipment layout plans for mechanical rooms

Floor plans for: HVAC, plumbing, and fire protection systems

Preliminary HVAC system schematics and flow diagrams

Acoustical and vibration control measures

Energy conservation measures

- Electrical

Power, telephone, and telecommunication distribution to project: plan and details

Site electrical plan showing routing with transformers, generators and vaults drawn to scale

Approximate sizes, locations and capacities of major components

Preliminary equipment layouts plan for electrical rooms

Roof plan for lightning protection

Floor plans for: lighting, power, telephone, security, fire detection systems

Light fixture schedule

Single line diagrams for: power distribution, fire alarm and security systems

- Class B estimate update

Based on completed Design Development documents, update quantity take-off.

Based on completed Design Development documents update estimate with more detailed engineering calculations, quantities, and pricing.

Cost estimate shall be prepared using MS Excel software program and shall comply with CSI's Master Format.

Outline Specifications

- Prepare a list of specification sections to be incorporated into the technical specifications of the Construction Document package for this project. Each specification section shall contain a description of the major and specialized construction materials proposed for use in this project. Outline specifications shall be in approved version of MS Word and numbering shall comply with CSI's Master Format.

Constructability Analysis

- NPS Checklist

Product File

- Product file of preferred/selected material samples and literature from all disciplines